In the Claims:

1-99. (Canceled)

100. (Currently Amended) ~~The system of claim 99~~ A system for controlling and modifying vibratory motion of at least one string of a stringed musical instrument comprising:

a) transducer means associated with at least one string for providing a sensing signal representative of vibratory motion of the string and for applying a force to said at least one string in accordance with an actuating signal;

b) at least one motion controller associated with said transducer means and responsive to said sensing signal to form said actuating signal for selectively damping and/or exciting the vibratory motion of the string or selected harmonics thereof; and

c) user control means to provide control over the behavior of said at least one motion controller

wherein said transducer means comprises at least one unitary sensing/actuating transducer arranged to produce during a first portion of a time frame the sensing signal representative of string motion and to apply during a second portion of said time frame an actuating force to said at least one string in accordance with the actuating signal; and

wherein said at least one motion controller is arranged to respond to said sensing signal during said first portion of said time frame and to provide said actuating signal during said second portion of said time frame for selectively controlling the vibratory motion of the string over a succession of said time frames.

101. (Currently Amended) The system of claim [[99]] 100 wherein said transducer means further comprises at least one sensing transducer for providing the sensing signal and at least one separate actuating transducer for applying a force to said at least one string in accordance with the actuating signal; and

wherein said at least one motion controller comprises an adaptive control system coupled to said sensing transducer and to said separate actuating transducer

and arranged to respond to said sensing signal and to provide and adaptively adjust the characteristics of said actuating signal to maintain control of said vibratory motion of the string.

102. (Previously Presented) The system of claim 100 wherein said at least one unitary transducer comprises first and second unitary sensing/actuating transducers arranged in an orthogonal relationship relative to the string and wherein said motion controller is switched between the first and second unitary transducer at one-half the time frame rate the first and second unitary transducers each being arranged to sense and actuate separate orthogonal components of the vibratory motion in more than one plane.

103. (Currently Amended) The system of claim 100 [[99]] including at least one secondary sensing transducer for providing a secondary sensing output signal in accordance with the vibratory motion of at least one string.

104. (Currently Amended) The system of claim 100 [[99]] further including a mixer for combining signals of the system into a composite audio output signal.

105. (Previously Presented) The system of claim 100 wherein the said motion controller is arranged to drive the transducer using a discontinuous pulse width modulator further having a pre-distorting element to correct a non-linearity of said pulse width modulator.

106. (Currently Amended) The system of claim [[99]] 100 including an external input for supplying an external signal to modify the vibratory motion of said string.

107. (Current Amended) The system of claim [[99]] 100 wherein said user control means includes at least one control that is manually operable for control of system behavior.

108. (Previously Presented) The system of claim 100 wherein said at least one motion controller is responsive to a reference control signal input prescriptive of string motion and wherein said user control means includes a supervisor to facilitate player control of system behavior, said supervisor being responsive to preselected player techniques involving selected characteristic features of vibratory motion and supplying said reference control signals to said at least one motion controller.

109. (Currently Amended) The system of claim [[99]] 100 wherein said actuating signal comprises a correction signal for reducing deviation of the string's vibratory motion from a desired motion.

110. (Previously Presented) The system of claim 108 wherein vibratory motion of the string undergoing a smooth changing of pitch comprises one of the preselected player techniques.

111. (Previously Presented) The system of claim 110 wherein the supervisor is arranged to cause the motion controller to provide the actuating signal that modifies the vibratory motion of the string in accordance with a measurement of vibrato.

112. (Previously Presented) The system of claim 111 wherein said measurement is of the magnitude of pitch change due to vibrato and said modification to motion comprises exciting and sustaining string vibration according to said magnitude of vibrato.

113. (Previously Presented) The system of claim 110 wherein the supervisor is arranged to cause the motion controller to provide the actuating signal that modifies the vibratory motion of the string in accordance with a measurement of pitch change due to glissando.

114. (Previously Presented) The system of claim 108 wherein the supervisor is arranged to cause the motion controller to provide the actuating signal that modifies the pitch of string vibration.

115. (Previously Presented) The system of claim 114 wherein said pitch modification substantially corrects the pitch to conform to a standard pitch.

116. (Previously Presented) The system of claim 108 wherein amplitude of vibratory motion comprises one of the preselected player techniques.

117. (Previously Presented) The system of claim 116 wherein a string undergoing motion having amplitude above a threshold causes the supervisor to cause the motion controller to provide an actuating signal to excite and modify the string's vibratory motion and a string undergoing vibratory motion having amplitude below a threshold causes the supervisor to cause the motion controller to provide an actuating signal to damp the string's vibratory motion.

118. (Previously Presented) The system of claim 117 wherein said threshold is dynamic and derived from an averaging of one or more string vibratory amplitudes.

119. (Previously Presented) The system of claim 108 wherein a motion of the string creating a new note comprises one of the preselected player techniques.

120. (Previously Presented) The system of claim 119 wherein the supervisor is configured cause the motion controller to modify the vibratory motion producing the most recent note played and to damp other string vibrations.

121. (Previously Presented) The system of claim 108 wherein the vibratory motion of the string creating a new note having a given spectrum comprises one of the preselected player techniques.

122. (Previously Presented) The system of claim 108 wherein the vibratory motion of the string creating one or a series of new notes of specified pitch comprises one of the preselected player techniques.

123. (Previously Presented) The system of 122 having a user selectable mode wherein occurrence of a preselected one or a series of new notes causes the supervisor to activate a corresponding instrument definition obtained from several stored alternative instrument definitions each instrument definition prescribing a separate behavior of the instrument.

124. (Previously Presented) The system of claim 108 having a mode wherein sympathetic vibrations occurring on unplayed strings are damped.

125. (Previously Presented) The system of claim 108 wherein the vibratory motion of the string being muted is one of the preselected player techniques.

126. (Previously Presented) The system of claim 108 wherein the supervisor is further arranged to record, store, access, route and process data relating to the system.

127. (Previously Presented) The system of claim 108 wherein the supervisor is provided with one or more external data connections whereby programs in the supervisor can be changed or replaced and/or for general data communications and/or for an auxiliary user-interface.

128. (Previously Presented) The system of claim 108 wherein a portion of the system comprises analog electrical circuitry.

129. (Previously Presented) The system of claim 101 wherein said at least one motion controller is responsive to a reference control signal input prescriptive of

string vibratory motion and wherein said user control means includes a supervisor to facilitate player control of system behavior, said supervisor being responsive to preselected player techniques involving selected characteristic features of string vibratory motion and supplying said reference control signal to said at least one motion controller.

130. (Previously Presented) The system of claim 129 wherein a motion of the string undergoing a smooth variation of pitch due to vibrato is one of the preselected player techniques;

the supervisor is arranged to cause the motion controller to provide the actuating signal that modifies the vibratory motion of the string in accordance with a measurement of vibrato; and

wherein said measurement is of magnitude of pitch change due to vibrato and said modification to vibratory motion comprises exciting and sustaining string vibratory motion according to said magnitude of vibrato.

131. (Previously Presented) The system of claim 129 wherein the supervisor is arranged to cause the motion controller to provide the actuating signal that modifies pitch of string vibration.

132. (Previously Presented) The system of claim 129 wherein an amplitude of string vibratory motion comprises one of the preselected player techniques; and

wherein a string undergoing vibratory motion having amplitude above a threshold causes the supervisor to cause the motion controller to provide the actuating signal to excite and modify the string's vibratory motion and a string undergoing vibratory motion having amplitude below a threshold causes the supervisor to cause the motion controller to provide the actuating signal to damp the string's vibratory motion.

133. (Previously Presented) The system of claim 132 wherein said threshold is dynamic and derived from an averaging of one or more string vibratory amplitudes.

134. (Previously Presented) The system of claim 129 having a mode wherein sympathetic vibrations occurring on unplayed strings are damped.

135. (Previously Presented) The system of claim 129 wherein the supervisor is provided with one or more external data connections whereby programs in the supervisor can be changed or replaced and/or for general data communications and/or for an auxiliary user-interface.

136. (Previously Presented) The system of claim 129 wherein the supervisor is further arranged to record, store, access, route and process data relating to the system.

137. (Previously Presented) The system of claim 129 wherein a portion of the system comprises analog electrical circuitry.

138. (Canceled)

139. (Currently Amended) ~~The method of claim 138~~ A method of recognizing preselected player techniques in playing a stringed musical instrument and utilizing such recognized player techniques as player commands to govern the operation of at least one motion control function coupled to at least one string of said instrument comprising:

producing a sensing signal representative of the vibration of said at least one string and applying a force to said string in accordance with an actuating signal;

electronically recognizing one or more preselected player techniques; and

controlling said motion controller function in accordance with the recognized player techniques to apply the actuating signal to modify the vibratory motion of said

at least one string by selectively damping and/or exciting harmonic components of said vibratory motion

wherein the step of recognizing preselected player techniques includes:

extracting feature signals from the sensed vibratory motion of one or more strings; and

routing the extracted feature signals according to their correspondence to one or more preselected player techniques; and

applying, as pre-specified functions of the types and measurements of the routed extracted feature signals, actuating signals to modify the vibratory motion of said at least one string.

140. (Previously Presented) The method of claim 139 wherein routing the extracted feature signals includes providing a set of pattern matching rules representative of features of string vibratory motion associated with the preselected player techniques, testing the extracted feature signals against said rules, and sending specific test-selected feature signals to prescribed function processors to generate control signals to govern said at least one motion control function.

141. (Currently Amended) The method of claim [[138]] 139 wherein the preselected player techniques include one or more techniques in the form of amplitude of string vibration, vibrato, glissando, muting, plucking a new note of a selected amplitude, the spectrum of the new note, the spectra of a note, the harmonic balance of the new note, and one or a series of new note pitches.

142. (Currently Amended) The method of claim [[138]] 139 wherein a reference signal input receives control signals prescriptive of vibratory motions that are compared against the actual string vibratory motions as provided by sensing signals representative of string vibration to generate actuating signals resulting from said comparison that create forces to compel and constrain said string vibratory motion towards an intended vibratory motion as prescribed by said reference signal.

143. (Previously Presented) The method of claim 142 wherein said reference signal derives from an external signal input to the instrument.

144. (Currently Amended) The method of claim 142 wherein said reference signal is a frequency domain representation of the prescribed vibratory motion and the comparison includes converting said sensing signal representative of string vibration to the frequency domain representation, comparing the magnitudes of spectral components of said sensing signal against those of said reference signal and generating an error signal therefrom that controls a feedback filter **[[,]]** that forms said actuating signals.

145. (Previously Presented) The method of claim 142 including storing an array of reference signals and selecting particular reference signals from within said array according to extracted feature signals for routing to said reference signal input.

146. (Previously Presented) The method of claim 139 including storing an array of pre-specified command phrases and instrument definitions and having a player-selectable instrument redefinition mode wherein occurrence of said pre-specified command phrase comprising one or a sequence of notes causes the instrument definition to be changed accordingly.

147. (Currently Amended) The method of claim [[138]] 139 wherein in a case of multiple unitary sensing/actuating transducers all sensing signals from the transducers occur during the same first time portion of a time frame and all actuating signals applied to the transducers occur during a same second time portion of said time frame.

148.-150. (Canceled).

151. (Previously Presented) The system of claim 101 wherein said at least one sensing transducer is a bridge pickup transducer.

152. (Previously Presented) The system of claim 151 wherein said bridge pickup transducer is of the piezoelectric type.

153. (Previously Presented) The system of claim 129 wherein said reference control signal input establishes a target amplitude for string vibratory motion such that vibratory motion of amplitude less than the target amplitude is excited up to the target amplitude and vibratory motion of amplitude greater than the target amplitude is damped down to the target amplitude.